



## SEQUENCE LISTING

&lt;110&gt; MERKULOV, Gennady et al.

<120> ISOLATED HUMAN RAS-LIKE PROTEINS,  
NUCLEIC ACID MOLECULES ENCODING THESE HUMAN RAS-LIKE  
PROTEINS, AND USES THEREOF

&lt;130&gt; CL001196

&lt;140&gt; 09/820,003

&lt;141&gt; 2001-03-29

&lt;160&gt; 40

&lt;170&gt; FastSEQ for Windows Version 4.0

&lt;210&gt; 1

&lt;211&gt; 1405

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

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 Ile Glu Ser Phe Asn Asn Val Lys Gln Trp Leu Gln Glu Ile Asp Arg



				85					90					95			
Tyr	Ala	Ser	Glu	Asn	Val	Asn	Lys	Leu	Leu	Val	Gly	Asn	Lys	Cys	Asp		
			100					105					110				
Leu	Thr	Thr	Lys	Lys	Val	Val	Asp	Tyr	Thr	Thr	Ala	Lys	Glu	Phe	Ala		
		115					120					125					
Asp	Ser	Leu	Gly	Ile	Pro	Phe	Leu	Glu	Thr	Ser	Ala	Lys	Asn	Ala	Thr		
	130					135				140							
Asn	Val	Glu	Gln	Ser	Phe	Met	Thr	Met	Ala	Ala	Glu	Ile	Lys	Lys	Arg		
145				150					155						160		
Met	Gly	Pro	Gly	Ala	Thr	Ala	Gly	Gly	Ala	Glu	Lys	Ser	Asn	Val	Lys		
			165				170							175			
Ile	Gln	Ser	Thr	Pro	Val	Lys	Gln	Ser	Gly	Gly	Gly	Cys	Cys				
		180					185						190				

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 <213> Homo sapiens

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<210> 8  
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<400> 9  
 Thr Asn Val Glu  
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<400> 10  
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Gly Val Gly Lys Ser Cys  
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<400> 12  
Gly Ala Thr Ala Gly Gly  
1 5

<210> 13  
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<400> 13  
Gly Ala Glu Lys Ser Asn  
1 5

<210> 14  
<211> 8  
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<400> 14  
Gly Asp Ser Gly Val Gly Lys Ser  
1 5

<210> 15  
<211> 14  
<212> PRT  
<213> Homo sapiens

<400> 15  
Leu Leu Leu Ile Gly Asp Ser Gly Val Gly Lys Ser Cys Leu  
1 5 10

<210> 16  
 <211> 601  
 <212> DNA  
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<220>  
 <221> variation  
 <222> (301)...(301)  
 <223> 't' may be either present or absent

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 ccatgcctgg ctaatttttg tatttttagt agagacagtg ttccaccatg ttggccaggc 180  
 tggctctgaa ttccctgacct cgtgatctgt ccgttttggc ctctcaaatt cctgagatta 240  
 caggcatgag ccaccgagcc tggccagttt tctgagtttt tatttgaaat caaaataagc 300  
 tttttttttt tttttaatgg gctttagagt ccagggtaac gaacactttt tgggtgcctat 360  
 tactgaacca ttcagggtat tcctgggggtg gtgaccgtgt tcatttcaga aaccaacatg 420  
 ttcatttcag aaaccaaaact cgggtaactt ttgataagtt catcaactaa ggcccatggc 480  
 agaatttgag ggctaagggg tgtaattagt gtatgggtag aaataagtgc cttcttttcta 540  
 tattttggcg ttgtaggaat ttaaagtgat tctgcagtaa gtctcaggag acaattttct 600  
 t 601

<210> 17  
 <211> 601  
 <212> DNA  
 <213> Homo sapiens

<400> 17  
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 ctcatctcct tctttcgatt acccgtggcg cggagagtca gggcggcggc tgcggcagca 120  
 agggcggcgg tggcggcggc ggcagctgca gtgacatgtc cagcatgaat cccgaatagt 180  
 gagttcagga gagcaccggg cggctgggtc cgtggggccag cttgggggat cttaaagggg 240  
 tcgaggaggg ttggggcaga agtcggggca tcggctgggg tgaggcgagg gtgatgggtc 300  
 rggagaggct ggcggccggg agtcgggccc cattgtctga cgcggagggg cggccgcgcg 360  
 ggggaggggt cgggcccggg gggtagccg cccgggcctg gaccgggtca ggttagaggg 420  
 cctgactgcg gggcggtgct tgagggaagc tgccgagggg cctggggcgg tgtgaagggg 480  
 tatcttctct cggaggcagt gacttttgaa ggaggacttg tctctaaggg gaggggatgg 540  
 ggtgggagag cccttctaga gggcactgtc agaccctgcg cccgcactct gcggagctgt 600  
 c 601

<210> 18  
 <211> 601  
 <212> DNA  
 <213> Homo sapiens

<400> 18  
 ctgggaactg gtgttcaact cccttgggta gagtttgttg ggctctctc aatggccctt 60  
 taataatttc ctctacagtt tacatgcatg taaagtaatg aataattgga agagaccgaa 120  
 ttggtattcc ttttcagtgt caaaggcctt tgagggatgg gggaaaatca gtatttgttg 180  
 taaaagttga gtttatttgc tggtttggtc aattactgct agacattttc ccctaaaagg 240  
 tccaccacc agtttagctg actgtcatat gtgtgtcaca tggctcttgc aaaatgctta 300  
 maagttttgt aatagtgtgg cttgaagctg aaatcttttg cactaaacag aaaccgtagt 360  
 attttattag aatttcatgc tttagaagtt gagggtagtg ttctttagt gacatttgct 420  
 gtgttgacag tttaaaaaaa ttttttttcc aagggtcca aggacaaagt tggttttgca 480  
 cagttgaacg gaggtgaact tgaggttctt aatttagtag ttttcttggg aacaataaag 540

aacatggatt tactgcttta tcgaggttta tagacctcta ctgttcagga aattttctga 600  
a 601

<210> 19  
<211> 601  
<212> DNA  
<213> Homo sapiens

<220>  
<221> variation  
<222> (301)...(301)  
<223> 'a' may be either present or absent

<400> 19  
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cagcactttg ggaggccgag gtgggcggat catttgaggt catgaccagc ctggccaaca 120  
tgatgagaca ctgcctctac taaaaatata aaaattagct ggggtgtggtg gtgcacgcct 180  
gtaattccag ctactcagga acctgaggca ggagagtcac ttgaacctgg gaggcggagg 240  
ctgcagttag tccagatcat gccactgcac tccagcctga gggacagagt gagactcctc 300  
aaaaaaaaaa aaaaaaaaaa aaagaaatac ttaacattat tctcgtgatt attctcataa 360  
catttttcat aatccactgg cttccagtgg atttttttag tgtcaagaaa ataattttga 420  
ttggttcatc ttttaaggaat gtgttaagaa taaagcatgt ctacctgtct tcagtatacc 480  
agctaactat agtaggaaga aatatagttag tctacttaga tcaactataa ttctttaatg 540  
cagaaaaagt ttaaggtatt taccttattt ttagcccca tccccttaag tatatcatgg 600  
c 601

<210> 20  
<211> 601  
<212> DNA  
<213> Homo sapiens

<220>  
<221> variation  
<222> (301)...(301)  
<223> 't' may be either present or absent

<400> 20  
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cgtggtggtg tgcgcttgta gtccaagct actgaggagg ctgagacaag agaatcgctt 120  
gaatctggga aaaagagggt gccgtgagcc aagattggcc actgcactcc agcctgggtg 180  
acagagttag attctgtctc aaaaaaataa aaaataaaaa tttccccctt taatcaaatt 240  
aagttaaaat gagggatggt agacagtttt taaccatcaa atatttttagt ttagtttttt 300  
ttttttaacg ttgtcttaaa gatggaagtg cttcaaaatc aaatcttcct tgccagttct 360  
ctacttggct tctttttttt tcttttttag atagagtctc actttgtcac tggagtgcgt 420  
tggcgtgatc tcggctcact gcaacctccg cttccaggt ttaagttagt cttccacctc 480  
agcctctcaa gtagctggga gtacaggtgt gtgccaccac acccggctaa tttttgtagt 540  
tttagtagag acagggtttc actatgttgg ccaggctggc ctcaaactcc tgacctcgtg 600  
a 601

<210> 21  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 21  
ctgaggaggc tgagacaaga gaatcgcttg aatctgggaa aaagagggtg ccgtgagcca 60  
agattggcca ctgcactcca gcctgggtga cagagtgaga ttctgtctca aaaaaataaa 120

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aaataaaaaat ttcccccttt aatcaaatta agttaaatag agggatgtta gacagttttt 180
aaccatcaaa tattttagtt tagttttttt tttttaacgt tgtcttaaag atggaagtgc 240
ttcaaaatca aatcttcctt gccagttctc tacttggtt cttttttttt ctttttgaga 300
yagagtctca ctttgtcact ggagtgcgtt ggcgtgatct cggtcactg caacctccgc 360
cttcagggtt taagtgattc ttccacctca gcctctcaag tagctgggag tacagggtgtg 420
tgccaccaca cccggctaata tttttagttt ttagtagaga cagggtttca ctatgtttggc 480
caggctgggc tcaaaactct gacctcgtga tccaccacc tcagccaaat tgctgggatt 540
acttgtgtga gccacgcgcc tggcttctac ttggctttta aagggaattt tgctttctga 600
g 601

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<210> 22
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 22
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tccctttgtg tctatatact cataataacat tttgcataaa gttataggca gttcacacca 120
aggctgttca tgaacctcag attaagaata cttgatttag gagattgaaa acagaaaaga 180
gaatgttaac tatcattatc aatattaaaa tgtgaaaatc tgagagtgc aaagcttagc 240
tttaaatctg gtatcccaaa ctcatcttag tttttttttt tttttttttt tttttgagac 300
raggtgtcgc tttgtccccc aggcctggagt gtagtgggtg gatcttggct cactgcaacc 360
tccacctccc aggttcaagt gattctctcg cctcagcctc tgaagttgct gggattacag 420
gctgcgccac cagcccagc taattttttg tatttatagt aaagacggag tttcacctta 480
ttggccaggc tgggtcctaaa ctctgatct tgtgatcctc ccgcctcggc ctcccaaagt 540
gctgggatta cagggtgtgag ccactgttcc cggcctaatt tgagttttaa aatgtggagt 600
t 601

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<210> 23
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 23
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gttaactatc attatcaata ttaaaatgtg aaaatctgag agtgacaaaag cttagcttta 120
aatctgggtat cccaaactca tttgagtttt tttttttttt tttttttttt tgagacaagg 180
tgtcgtcttg tccccaggc tggagtgtag tgggtgtgatc ttggctcact gcaacctcca 240
cctcccaggc tcaagtgatt ctctgcctc agcctctgaa gttgctggga ttacaggctg 300
ygccaccacg ccagctaat tttttgtatt tatagtaaag acggagtttc accttattgg 360
ccaggctggc ctcaaaactc tgatcttgtg atcctccgc ctcggcctcc caaagtgtg 420
ggattacagg tgtgagccac tgttcccggc ctaatttgag ttttaaaatg tggagtttaa 480
gatgttagtc ttaaaagtggg ttagatgaaa tttataaaaa tagtcaaata gctaaattta 540
taaaaggcca tttgaaacaa ttttgtgaaa tatataatgt ggataattat gtagtgcttt 600
a 601

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<210> 24
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 24
taagaatact tgatttagga gattgaaaac agaaaagaga atgttaacta tcattatcaa 60
tattaaaatg tgaaaatctg agagtgcacaa agcttagctt taaatctggg atcccaaaact 120
catttgagtt tttttttttt tttttttttt tttgagacaa ggtgtcgtt tgccccccag 180
gctggagtgt agtgggtgtg tcttggctca ctgcaacctc cacctcccag gttcaagtga 240
ttctcctgcc tcagcctctg aagttgctgg gattacaggc tgcgccacca cgcccagcta 300

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rttttttgta tttatagtaa agacggagtt tcaccttatt ggccaggctg gtctcaaact 360
cctgatcttg tgatcctccc gcctcggcct cccaaagtgc tgggattaca ggtgtgagcc 420
actgttcccg gcctaatttg agttttaaaa tgtggagttt aagatgttag tcttaaagtg 480
gggttagatga aatttataaa aatagtcaaa tagctaaatt tataaaaggc catttgaaac 540
aattttgtga aatatataat gtggataatt atgtagtgtc ttatgtgtag attggtggtt 600
a                                                                 601

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<210> 25
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 25
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aggccaggag tttgagacct gggcagcata tgaagaccct gtctctaaaa aactaaaaat 120
aaaaaatagc caggtgtggt tgggtgtgct gtggtcccag ctactcaaga ggctgaggca 180
agagggttgc ttgagcccag aagtggagg ctgccgtgaa ctgtgattgc accactgcac 240
ttcagcctgg gtgacatagc aagaccctgt ctctgtggtg gtggtgggtg ggggtggggg 300
magggattta agaagggttt gtgaggtagt tattatttat aaatgggctt ttaactttac 360
ccttcacatc ttgggttgaa attaatgtta tccattctca gtttttctgt cttgctatat 420
atttaaacct ggagacttag aggtcatgga tgtctttcta tgaaaagcaa atgaagcaga 480
gggctgcctt ctcttgctgt agagggcaca cttgctgcag agcatgttac tgttttatgc 540
attgctaggc tttgggagtt gtgacttgta tgatcatagt acttacaact attagttggc 600
a                                                                 601

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<210> 26
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 26
caccacaga tagctatgtc aaacgtaagg gtggagaaac acagacccca aacttctcga 60
gggtagaaaa tatgagggtta tagtagatta gaactacaaa aagctagagg aagttctgaa 120
ctggaaacag tggataggat ttactagaat aatttacgag ggtgacaatt gtaaactctc 180
ataggtttct ttttttctct ttctcttttt ttttttttga gatggagtct cgctctgttg 240
cccaggctgg agtgcaatgg cgcagtctct cctcactgca acctccgcct cctgggtcca 300
rgtgattctc ctgccttagc cacccaagta gctgggatta caggcatctg ccaccatgct 360
gagctaattt ttgtattttt ttttttagta gagacggggt ttcaccatgt tggtcaggct 420
ggctcttgaa tcctgacctc aggtaatcca cccaccttgg cctcccaaag tgctgggatt 480
acagggtgta gccaccgcgc ccagccaaat ttttattggt ttctaaacta gcgtaattta 540
gtttttttca cttaagtcaa aattatatta ttgtaggata aaaacttagt gatccaaatt 600
c                                                                 601

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<210> 27
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 27
atccaaattc atgaggaatg aagaataaat acattttaaag tcttaccatt tgctaaatta 60
gtcttggtgc tttgtaccaa aattctgtcc ttgtgctctg taattttata tttgtatatt 120
ttctatcaac atttttactg tgtggtgttt tgtaaattat aaaaacgttt taaagcaaac 180
tcagaacaat gaattctcac gaatattcag tatatttaca gttgagaaat aaactacttc 240
tgtagtaggt aatttataat gtcccaatgc aagttaacgt gtcactgatc acgctattca 300
rgtgtgtgtc tttgataagg ggagggtggg aagtttgtgg gtttgatttt atttgccttt 360
ctcatgtgac tgttgtcatg ttagtaaaaca aatggtttgc gagagaacca gtagtctttt 420
gcaaagattg tcttatacag agcactcaat tcttcatatt atttataatg gctttaattt 480

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aagccttaaa ttattagaaa ctcataaata atttttttat ttgttttttt gagatggagt 540  
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 c 601

<210> 28  
 <211> 601  
 <212> DNA  
 <213> Homo sapiens

<400> 28  
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 ttctttttct ttttgcagtg attatttatt caagttactt ctgattggcg actcaggggt 180  
 tggaaagtct tgccttcttc ttagggttgc agtaagttga aattgaaatg tctttacaat 240  
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 mgaataagtt aattcttcca gaatttatat atttaaagac tccaaatata catccccagt 360  
 ggtatcttgg actgttaaat agaaaaatat tggtgctctt aaaagaaatt cagtgaagtc 420  
 tggttataaa gtcagaatgt ctaatacttt tggtcagagt caaacagcag ttccaatata 480  
 ggcagcaagt taaaggggta gttggtggcc tgtgttgaaa gcgacttgat gaaaataaat 540  
 ctttaaatta aacttttagta gaataaaaag aaaaagcaga gccaggtgac gcagtggatc 600  
 a 601

<210> 29  
 <211> 601  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> variation  
 <222> (301)...(301)  
 <223> 'a' may be either present or absent

<400> 29  
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 ttgggaggcc gagacgggcy gatcacaagg tcaagagatt gagaccatcc tggctaacac 120  
 ggtgaaaccc cgtctctact aaaaatacaa aaaatcagct ggggtgtggg ccacacgcct 180  
 gtagtccag ctactcggga ggctgaggca ggagaatcgc ttgaaccag gaggcggagg 240  
 ttgcagttag ctgagatggt gccactgcac tccagcctgg caacagagca agactgtctc 300  
 aaaaaaaaaa gaaaaaaaaat aaaaaaaca attagcatgt ttcccttcta gagatcattg 360  
 tttctcagag catggacca agactcctgg gggttacca gacctctca ggtagcccat 420  
 gaggtcaaaa tctcctaata atactaagat gttagtattt gtaaggaaat atttacttgg 480  
 taataatact aatataaaa atgtttgcgt ttttcagtga tgacattggc tctggtacaa 540  
 aagcatgtgg gtaaaattgc tgctggcttg gtacacatca aggcagcgct aagctccaaa 600  
 t 601

<210> 30  
 <211> 601  
 <212> DNA  
 <213> Homo sapiens

<400> 30  
 gatgtttgcy tttttcagtg atgacattgg ctctggtaca aaagcatgtg ggtaaaattg 60  
 ctgctggctt ggtacacatc aaggcagcgc taagctcaa attgtactca tggatgaggc 120  
 attctttacc tctgtgccct cacaggaaca aaaacaagcc gtgccatttt tattgaagat 180  
 tgccttgac aaaacagtta aaatgattaa tttttgaaaa atgttgatcc atgagtattc 240  
 ctttaaaaat atttgtgaag aaatgggaag ttcacataaa acaatgtttt ttttttgttt 300  
 kttttttttt ttttttttga gacagattct ggctgtgttg ccaaggctag agtgcagtg 360

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cgtctggctc ccaggctcaa gctgttctcc cacttcagcc tcccaagtgg ctgggacctc 420
ccaagtggat gcgccatcat gcctggctga tttttgtatt tttttgtagt gacaaggctc 480
cactgtgttg cacaggctgg tctcaaactt ctgagctcaa gcgatgcatg tgcctcagcc 540
tcccaaagtg ctggagaaag cactttttac tgcatactgg ctagtgtgtt gggtattttg 600
g
601

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<210> 31
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 31
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atcttggctc cctgactagc taggtttaca ggcgtgtgcc atcacacca ctaatttttt 180
gtatttttag tagagacagg gtttcacatg ttggccagg ctggtcttga actcctgac 240
taaagtgagc ctcccacctt ggctcccaa agtgctggga ttacatatgt gagccactgc 300
bcctggcctc tatatacttc tatagtacct gatacttatt aggcactcaa ttacaacata 360
actttttttt tttttttttt ttttgagaca gagacatgcc ttgtcgccctg ggctggagtg 420
cagtggcaca gtctcggctc actgcaacct tcacctcccg ggttcaagtg attctccttc 480
ctcagcctcc cgggtagctg ggattacagg cgcccgccac cacgtccagc taattttttg 540
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t
601

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<210> 32
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 32
atgtgtgac attggtgttt ataagatttg ggtgtgtatt cgtgtgtgaa acattcatat 60
tttgttactt tcctgtggct ggaagggatc ttataggaca ctgtctttca tctttgtctg 120
tctttcatct ttaataggaa tttcttttcc atgcctgaag gcctcatttt gaacattttg 180
tttgtttgtt tttttatttt ttgagataca gtattgtctt gtctcccagg ctggagtgca 240
gtggcgcgat ttgagctcac tgcaacctcc gcctcctggg ttcaagtgat tctcctgcct 300
yagcctccct aatagctggg attacatgtg tgtaccacca tgcccggaca attttttttt 360
ttttgagatg gagccttgct ttgtcgccca ggctggagtg ccagtgggtc aatcttggct 420
cgctgcagcc tccgcctccc aggttcaagc agttctcttg cctcagcctc ctgagtagct 480
gggattacag gcgtgcgcca ccacacctg ctaatttttt gtatttttag tagagacaga 540
gtttcaccat gttgggttag ctggtctcga actcctgacc tcgtgatctg cctgactcgg 600
c
601

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<210> 33
<211> 601
<212> DNA
<213> Homo sapiens

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<400> 33
gatttgggtg tgtattcgtg tgtgaaacat tcatattttg ttactttcct gtggctggaa 60
gggatcttat aggacactgt ctttcatctt tgtctgtctt tcatctttaa taggaatttc 120
ttttccatgc ctgaaggcct ctttttgaa attttgtttg tttgtttttt tattttttga 180
gatacagtat tgctctgtct cccaggctgg agtgacagtg cgcgatttga gctcactgca 240
acctccgctt cctgggttca agtgattctc ctgcctcagc ctccctaata gctgggatta 300
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